



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/918,724

08/01/2001

Richard W. Fling

2037.0040000

2475

30734

7590

06/10/2005

BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, DC 20036-5304

EXAMINER

TRAN, KHAI

ART UNIT

PAPER NUMBER

2637

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/918,724	Applicant(s) FLING ET AL	
	Examiner KHAI TRAN	Art Unit 2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 12-16, 21 and 22 is/are rejected.
- 7) ☒ Claim(s) 7-11 and 17-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/29/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 12-16, 21-22 rejected under 35 U.S.C. 102(e) as being anticipated by LeHan et al (U.S. Pat. 5,642,573).

Regarding claim 1, Lehan et al disclose a data recovery subsystem for use in a receive system configured to receive a magnetic field signal (RF signal) as shown in Figure 8, comprising: a first mixer (a balance modulator 118) adapted to mix a Radio Frequency (RF) signal representative of the magnetic field signal with a first Local Oscillator (LO) signal (as generated by a VCO 146 and pseudo noise generator 120) to produce an intermediate Frequency (IF) signal representative of the magnetic field signal, the IF signal including an IF carrier component and an IF modulation sideband (col. 9, lines 3-43); a Phase Locked Loop (PLL) (comprising a phase detector 130, a loop filter 146, a loop filter 160, a VCO 126 for phase locking a second LO signal to the IF carrier component of the IF signal) adapted to phase-lock a second LO signal to the

IF carrier component of the IF signal; and a second mixer (124, 154) adapted to synchronously mix the IF signal with the second LO signal to produce a baseband signal including a demodulated sideband, the demodulated sideband corresponding to the modulation sideband of the magnetic field signal (col. 5, lines 15-49).

Regarding claim 2, LeHan et al also disclose that wherein the PLL includes a Voltage Controlled Oscillator (VCO) adapted to generate a VCO output signal that is phase-locked to the IF carrier component of the IF signal, the subsystem further comprising a feedback circuit adapted to derive the first LO signal from the VCO output signal, whereby the first LO signal is also phase-locked to the IF carrier component of the IF signal (see Fig. 8 comprising a VCO 144, a loop filter 160; and a feedback circuit (a VCO 144, a loop filter 146, a PN code generator 120 for generating a first LO signal from the VCO 144).

Regarding claim 3, LeHan et al further disclose that the RF signal includes an RF carrier component having an RF carrier frequency substantially equal to an integer multiple of both 50 Hz and 60 Hz; and the RF signal includes an RF modulation sideband having sideband energy, a substantial portion of the sideband energy being contained between the RF carrier frequency and a frequency spaced 50 Hz from the carrier frequency (col. 5, line 15 to col. 6, line 23).

Regarding claim 4, LeHan et al disclose that wherein the PLL includes: a PLL mixer (a mixer 154) adapted to derive an error signal representative of a phase difference between the IF carrier component of the IF signal and a feedback signal; a filter (a NB filter AMP limiter 156) adapted to filter the error signal to thereby produce a

filtered error signal; a Voltage Controlled Oscillator (VCO 126) adapted to generate a VCO output signal responsive to the filtered error signal; and a feedback circuit (a loop filter 160, a VCO 126, a loop filter 146, a VCO 144) adapted to derive the feedback signal and the second LO signal from the VCO output signal.

Regarding claim 5, LeHan et al disclose that a second feedback circuit (a VCO 144, a PN code generator 120) adapted to derive the first LO signal from the VCO output signal, whereby the first LO signal is also phase-locked to the IF carrier component of the IF signal (col. 5, line 15-49).

Claims 12-16, and 21-22 are similar to claims 1-6. Therefore, claims 12-16, 21-22 are rejected by virtue of their dependency.

Allowable Subject Matter

3. Claims 7-11, 17-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: Lehan et al fail to disclose or suggest that a baseband filter adapted to filter the baseband signal and thereby produce a filtered baseband signal including the demodulated sideband; and a signal squarer following the baseband filter and adapted to derive a logic signal from the filtered baseband signal, the logic signal being representative of information conveyed by the demodulated sideband further

comprising: a local oscillator for generating a local clock and a data synchronizer adapted to derive a stable re-synchronizing clock from the local clock, and synchronize the logic signal to the re-synchronizing clock, thereby producing a re-synchronized logic signal having reduced timing jitter relative to the logic signal.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Noda et al (U.S. Pat. 4,642,573) disclose a phase locked loop circuit.

Lindell et al (U.S 2003/0008628 A1) disclose method and apparatus for tuning pre-selection filter in radio receivers.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHAI TRAN whose telephone number is (571) 272-3019. The examiner can normally be reached on 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JAY PATEL can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



KHAI TRAN
Primary Examiner
Art Unit 2637

KT
June 9, 2005